

## CLAIMS

What is claimed is:

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1. A digital audio/video decoder comprising:
  - a file reader capable of obtaining an encoded audio/video data stream from a data source;
  - a navigator that instructs the file reader to obtain the encoded audio/video data stream;
  - a splitter that separates the encoded audio/video data stream obtained by the file reader into one or more component data streams; and
  - a reprogrammable proxy filter that decodes and converts the one or more component data streams into three or more renderable signals including at least one renderable audio signal and at least two renderable video signals.
2. The digital audio/video decoder as recited in claim 1, further comprising a user interface connected to the navigator for selecting the encoded audio/video data stream to be obtained.
3. The digital audio/video decoder as recited in claim 2, wherein the user interface further comprises more than one predefined functions for selecting the encoded audio/video data stream to be obtained.

1 4. The digital audio/video decoder as recited in claim 3, wherein the one or  
2 more predefined functions comprises:  
3 a play function;  
4 a pause function;  
5 a menu function;  
6 a stop function;  
7 a previous function; and  
8 a next function.

5. The audio/video decoder as recited in claim 1, wherein the one or more  
component data streams further comprises:  
an audio data stream;  
a video data stream;  
a subpicture data stream; and  
a navigation data stream.

1 6. The digital audio/video decoder as recited in claim 5, wherein the  
2 navigator is coupled to the splitter such that the navigator can use the navigation  
3 data stream to select the encoded audio/video data stream to be obtained.

1 7. The digital audio/video decoder as recited in claim 1, wherein the  
2 reprogrammable proxy filter further comprises:

3 an audio decoder;  
4 a video decoder; and  
5 a subpicture decoder.

1 8. The digital audio/video decoder as recited in claim 1, wherein the  
2 reprogrammable proxy filter can decode and convert a component data stream that  
3 conforms to a MPEG coding standard.

1 9. The digital audio/video decoder as recited in claim 1, wherein the  
2 reprogrammable proxy filter can decode and convert a component data stream that  
3 conforms to a Dolby AC-3 coding standard.

1 10. The digital audio/video decoder as recited in claim 1, wherein the  
2 reprogrammable proxy filter can decode and convert a component data stream that  
3 conforms to a PCM coding standard.

1 11. The digital audio/video decoder as recited in claim 1, wherein the  
2 reprogrammable proxy filter uses one or more decoding standards to decode and  
3 convert the one or more component data streams.

1 12. The digital audio/video decoder as recited in claim 11, wherein the one or  
2 more decoding standards can be upgraded via software.

DI 1 13. The digital audio/video decoder as recited in claim 11, wherein a new  
2 decoding standard can be added to the one or more decoding standards via  
3 software.

SubBQ 1 14. The digital audio/video decoder as recited in claim 1, wherein the three or  
2 more renderable signals comprises:

3 a renderable audio signal;  
4 a renderable video signal; and  
5 a renderable subpicture signal.

1 15. The digital audio/video decoder as recited in claim 14, further comprising  
2 a mixer for combining the renderable subpicture signal with the renderable video  
3 signal and producing a combined video signal.

1 16. The digital audio/video decoder as recited in claim 1, wherein the  
2 reprogrammable proxy filter further comprises a function for synchronizing the  
3 three or more renderable signals.

1 17. The digital audio/video decoder as recited in claim 1, further comprising:  
2 an audio renderer coupled to the reprogrammable proxy filter and  
3 an audio application program interface, the audio renderer controlling the  
4 manipulation and rendering of an audio signal from the three or more  
5 renderable signals; and  
6 a video renderer coupled to the reprogrammable proxy filter and a  
7 video application program interface, the video renderer controlling the  
8 manipulation and rendering of a video signal from the three or more  
9 renderable signals.

1 18. The digital audio/video decoder as recited in claim 17, further comprising:  
2 a sound card;  
3 a video graphics adapter; and  
4 a video driver for receiving the rendered video signal from the  
5 video application program interface and controlling the video graphics  
6 adapter such that a video output signal is produced from the rendered  
7 video signal.

1 19. The digital audio/video decoder as recited in claim 17, wherein the data  
2 source is a digital video disk.

20. A digital audio/video decoder comprising:

- a file reader capable of obtaining an encoded audio/video data stream from a data source;
- a navigator that instructs the file reader to obtain the encoded audio/video data stream;
- a user interface connected to the navigator and having one or more predefined functions for selecting the encoded audio/video data stream to be obtained;
- a splitter that separates the encoded audio/video data stream obtained by the file reader into an audio data stream, a video data stream, a subpicture data stream and a navigation data stream;
- the navigator being coupled to the splitter such that the navigator can use the navigation data stream to select the encoded audio/video data stream to be obtained;
- an audio filter that decodes and converts the audio data stream into a renderable audio signal;
- a video filter that decodes and converts the video data stream into a renderable video signal;
- a subpicture filter that decodes and converts the subpicture data stream into a renderable subpicture signal;
- a mixer for combining the renderable subpicture signal with the renderable video signal and producing a combined video signal;

1 a synchronizing filter for synchronizing the renderable audio signal  
2 and the combined video signal;  
3 an audio renderer coupled to the audio decoder and an audio  
4 application program interface, the audio renderer controlling the  
5 manipulation and rendering of an audio signal from the renderable audio  
6 signal; and  
7 a video renderer coupled to the mixer and a video application  
8 program interface, the video renderer controlling the manipulation and  
9 rendering of a video signal from the combined video signal.

1 21. A digital audio/video logic chip comprising:  
2 one or more interfaces;  
3 a multi-standard audio/video decoder coupled to the one or more  
4 interfaces;  
5 a multi-standard audio/video encoder coupled to the one or more  
6 interfaces; and  
7 a core logic device for controlling the one or more interfaces, the  
8 multi-standard audio/video decoder and the multi-standard audio/video  
9 encoder.

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- 1 22. A digital audio/video logic chip as recited in claim 21, wherein the one or  
2 more interfaces further comprises:  
3 a data-transfer interface for coupling the audio/video logic chip to  
4 at least one fixed storage device;  
5 a memory interface for coupling the audio/video logic chip to a  
6 computer memory;  
7 a microprocessor interface for coupling the audio/video logic chip  
8 to a central processing unit;  
9 a PCI interface for coupling the audio/video logic chip to a PCI  
10 bus; and  
11 an AGP interface for coupling the audio/video logic chip to a  
12 graphics accelerator.

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1 23. A multimedia accelerator system comprising:  
2 one or more interfaces;  
3 a 2D accelerator;  
4 a 3D accelerator;  
5 a multi-standard audio/video decoder coupled to the one or more  
6 interfaces, the 2D accelerator and the 3D accelerator; and  
7 a multi-standard audio/video encoder coupled to the one or more  
8 interfaces.

1 24. A multimedia accelerator system as recited in claim 23, wherein the one or  
2 more interfaces further comprises:  
3 a memory interface for coupling the audio/video logic chip to a  
4 computer memory;  
5 a PCI interface for coupling the audio/video logic chip to a PCI  
6 bus; and  
7 an AGP interface for coupling the audio/video logic chip to a  
8 graphics accelerator.